

What is claimed is:

1. A robot cleaner, comprising:

robot cleaner body comprising,

a control unit programmed to cause the robot cleaner to automatically run along a floor surface to be cleaned and perform a cleaning operation in accordance with preset values;

a driving portion driven in accordance with a control signal from the control unit, and

a dust suction portion for capturing and collecting dust by a suction motor;

and

a rotatable wet cloth cleaning unit detachably secured to a lower surface of the robot cleaner body.

2. The robot cleaner of claim 1, wherein the rotatable wet cloth cleaning unit comprises:

a rotatable wet cloth cleaning unit body;

a rotary body rotatably disposed on a lower end of the rotatable wet cloth cleaning unit body, and to which a wet cloth is detachably secured;

a rotation driving means for providing a driving force for rotating the rotary body during an operation of the robot cleaner; and

a driving force transmitting unit mounted in the rotatable wet cloth cleaning unit body with one end attachable and detachable with respect to the rotation driving means, wherein the driving force transmitting unit is used for transmitting the driving force of the rotation driving means to the rotary body.

3. The robot cleaner of claim 2, wherein the rotation driving means comprises a bi-directional rotation motor which has a pair of rotation axes protruding from both ends for rotating in the same direction, and the driving force transmitting unit comprises:

a worm wheel gear connected to the rotary body; and

a worm gear member having a worm gear portion engaged with the worm wheel gear, an engaging portion provided to one end for screw-fastening with the rotation axes of the rotation driving means, and a support portion formed at the other end of the engaging portion.

4. The robot cleaner of claim 3, wherein a male thread is formed on an outer circumference of the engaging portion of the rotation axes, and a female thread is formed on an end of the rotation axes or the engaging portion where the male thread is not formed.

5. The robot cleaner of claim 4, wherein the respective threads formed on the engaging portion and the rotation axes are left-hand threads so that fastening can be made when the rotation axes rotate in clockwise direction.

6. The robot cleaner of claim 4, wherein the respective threads formed on the engaging portion and the rotation axes are right-hand threads to enhance fastening when the rotation axes rotation in counterclockwise direction.

7. The robot cleaner of claim 3, wherein the engaging portion and the support portion are respectively supported on a support bracket which protrudes from a lower surface of the rotatable wet cloth cleaning unit body.

8. The robot cleaner of claim 7, wherein the support bracket has a seating hole pierced therethrough to receive the engaging portion and the support portion, respectively.